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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/630,904

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Lewis Gruber

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01/12/2006

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WASHINGTON, DC 20004

EXAMINER

SMITH, JOHNNIE L

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,904

Applicant(s)

GRUBER ET AL.

Examiner

Johnnie L. Smith II

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 36,38,65-67,107-109,111-113,118-121,126,128,133,141-143,145-156,158,160 and 161 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0731, 1208.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Continuation of Disposition of Claims: Claims pending in the application are 20-24,26,28,30-32,36,38,39,60-63,65-68,70,105-136,138-156 and 158-164.

Continuation of Disposition of Claims: Claims withdrawn from consideration are 1-19,25,27,29,33-35,37,40-59,64,69,71-104,137 and 157.

Continuation of Disposition of Claims: Claims rejected are 20-24,26,28,30-32,39,60-63,65,68,70,105,106,110,114-117,122-125,127,129-132,134-136,138,140,144,159 and 162-164.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/25/2005. The traversal is on the ground(s) that some groups or species were not identified. This is found persuasive, and the examiner accepts applicants revised grouping of claims into 9 species or groups. The examiner acknowledges applicants election of group 8. Therefore claims 1-19, 25, 27, 29, 33-35, 37, 40-59, 64, 69, 71-104, 137, and 157 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 20-24, 26, 28, 30-32, 39, 60-63, 65, 68, 70, 105-106, 110, 114-117, 122-125, 127, 129-132, 134-136, 138, 140, 144, 159, and 162-164 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2003/0032204 (Walt et al). In reference to claim 1, Walt teaches a method of sorting objects comprising: distributing the objects over a surface of a structure; and evaluating the objects in said structure according to a predetermined criteria using a beam steering apparatus (0012, 0014, 0036). In reference to claims 21-24, Walt teaches a method, wherein said structure is a disc (0028); further comprising: combining rotational motion of said disc with radial motion of a laser to access the objects further comprising: ensuring the objects maintain their relative positions on said disc; (0033-0034); wherein said ensuring step comprises: providing each of the objects in a fluid chamber (0066, 0068-0069).
4. In reference to claims 26, 28 and 30-32, Walt teaches a method, wherein said ensuring step comprises: providing an adhering surface to bind the objects (0030, 0076); further comprising: measuring the objects to ascertain their relative positions (0057); wherein said structure is a substrate, and said substrate is heated to melt a surface of said substrate, and the objects are embedded in said surface of said substrate (0028); wherein said predetermined criteria is a predetermined

absorption spectra (0058, 0080). In reference to claim 39, Walt teaches a method, wherein the objects that do not meet said criteria are killed (0052-0053).

5. In reference to claims 60-63, Walt teaches an apparatus for sorting objects comprising: a beam steering apparatus; and a structure having a surface on which the objects are distributed; wherein the objects are sorted using said beam steering apparatus, according to whether the objects meet predetermined criteria (0012, 0014, 0036); wherein said structure is a disc (0028); wherein a rotational motion of said disc is combined with a radial motion of a laser from said beam steering apparatus, to access the objects; wherein the objects maintain their relative positions on said disc (0033-0034).

6. In reference to claims 66, 68 and 70, Walt teaches an apparatus, wherein said structure is a substrate, and said substrate is heated to melt a surface of said substrate, and the objects are embedded in said surface of said substrate (0028); wherein said predetermined criteria is a predetermined absorption spectra (0058, 0080). Walt teaches an apparatus for sorting objects comprising: means for distributing the objects over a surface of a structure; and means for evaluating the objects in said structure according to predetermined criteria using a beam steering apparatus (0012, 0014, 0036).

7. In reference to claims 105, 106 and 110, Walt teaches an apparatus for sorting objects comprising: a beam steering apparatus including: a laser which provides a laser beam for illumination; a diffractive optical element which diffracts said beam into a plurality of beamlets; and an objective lens which converges the beamlet, thereby producing optical gradient conditions resulting in an optical data stream to form an optical trap; and a sample chamber into which the objects are introduced, trapped and sorted (0012, 0014, 0036); wherein the objects are moved by holding them with said optical trap and moving a stage of the microscope vertically or laterally (0115); wherein said optical element includes at least one fixed surface region (0087).

8. In reference to claims 114-117, Walt teaches an apparatus further comprising an imaging system; wherein said imaging system is a camera; further comprising: a display (0057); wherein a power level of said optical trap is monitored (0125).

9. In reference to claims 122-125, 127 and 129-132, Walt teaches an apparatus, wherein said sample chamber comprises: a plurality of channels for introducing the objects (0014); wherein said channels are connected to tubing by syringe needles, the tubing which lead to supply and collection reservoirs (0102); wherein the objects are suspended in a liquid medium (0001, 0100); wherein micro pumps

introduce said liquid medium with suspended objects into said channels of said sample chamber (0102), wherein said sample chamber is made of a PDMS resin (0069); wherein said object is identified according to predetermined criteria prior to sorting (0014); wherein said object is identified using spectroscopy (0082); wherein said spectroscopy is performed by illuminating said object using an imaging illumination source (0082); wherein a chemical identity of the object is assessed (0082).

10. In reference to claims 134-136, 138-140, 144 and 159, Walt teaches an apparatus, wherein said object which meets said predetermined criteria is contained by said optical trap (0052-0053); wherein said object is identified based on one of a reaction and binding of said contained object with predetermined chemicals (0082); wherein at least one of a movement and contents of each optical trap is monitored (0120-0121); wherein said movement of said object is tracked based on a predetermined movement of each optical trap caused by encoding said optical element; wherein a record of each object contained in each optical trap is maintained (0120-0121); wherein said optical data stream is processed to monitor its intensity (0067); wherein when said object meets said criteria, said object is labeled (0076-0077); wherein the beam steering apparatus is an optical trapping apparatus (0033-0034).



11. In reference to claims 162-164, Walt teaches a method of manipulating objects comprising: introducing the objects into an evaluation system; evaluating the objects according to a predetermined criteria using a beam steering apparatus; and manipulating the objects according to said predetermined criteria using said beam steering apparatus; a method of destroying objects comprising: accessing an object using a beam steering apparatus; examining said object to determine its identity; sorting said identified object according to predetermined criteria; and destroying said identified object when said object meets said predetermined criteria and an apparatus for destroying objects comprising: means for accessing an object using a beam steering apparatus; means for examining said object to determine its identity; means for sorting said identified object according to predetermined criteria; and means for destroying said identified object when said object meets said predetermined criteria (0012, 0014, 0036, 0058, 0080).

### *Claim Objections*

12. Claims 36, 38, and 65 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in

independent form. The above-mentioned dependant claims refer to canceled claims.

13. Claims 66, 67, 107-109, 111-113, 118-121, 126, 128, 133, 141-143, 145-156, 158, 160, and 161 are objected to as being dependent upon a rejected base claim.

### *Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references cited on attached PTO 892 contain art similar to that being claimed by applicant, more specifically, particle and cellular separation with laser steering.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnnie L. Smith II whose telephone number is 571-272-2481. The examiner can normally be reached on Monday-Thursday 6-4 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JLSII

Johnnie L Smith II  
Examiner  
Art Unit 2881

  
**JOHN R. LEE**  
**SUPERVISORY PATENT EXAMINER**  
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